

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A**

- **Article number: 10512**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
To this day we do not have any information about the identified use at the moment. These data are available we will add these to the safety data sheet.
- **Application of the substance / the mixture**
Photochemicals
Developer for X-ray films
Reserved for industrial and professional use.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Calbe Chemie GmbH
Stadtfeld 31
D-39240 Calbe
Tel.: +49 (0)39291 425-0
Fax: +49 (0)39291 425-25
e-mail: info@calbe-chemie.de
www.calbe-chemie.de
- **Informing department:**
Tel.: +49 (0)39291 42515
E-Mail: rs@calbe-chemie.de
- **1.4 Emergency telephone number:**
Tel.: +49 (0) 700-24112112 (CAL)
Tel.: +1 872 5888271(CAL)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



health hazard

Muta. 2	H341 Suspected of causing genetic defects.
Carc. 2	H351 Suspected of causing cancer.



corrosion

Eye Dam. 1	H318 Causes serious eye damage.
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environment

Aquatic Acute 1	H400 Very toxic to aquatic life.
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(Contd. on page 2)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 1)



Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05 GHS07 GHS08 GHS09

Signal word Danger

Hazard-determining components of labelling:

hydroquinone
potassium hydroxide

Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.

Precautionary statements

P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

EUH031 Contact with acids liberates toxic gas.

2.3 Other hazards

Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

- **Description:** Mixture of the substances listed below with harmless additions.

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 2)

• Dangerous components:

CAS: 123-31-9 EINECS: 204-617-8 Index number: 604-005-00-4 Reg.nr.: 01-2119524016-51-xxxx	hydroquinone ⚠ Muta. 2, H341; Carc. 2, H351 ⚠ Eye Dam. 1, H318 ⚠ Aquatic Acute 1, H400 (M=10) ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	5-10%
CAS: 111-46-6 EINECS: 203-872-2 Index number: 603-140-00-6 Reg.nr.: 01-2119457857-21-xxxx	2,2'-oxybisethanol ⚠ STOT RE 2, H373 ⚠ Acute Tox. 4, H302	5-10%
CAS: 584-08-7 EINECS: 209-529-3 Reg.nr.: 01-2119532646-36-xxxx	potassium carbonate ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	2-5%
CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2 Reg.nr.: 01-2119486683-25-xxxx	boric acid ⚠ Repr. 1B, H360FD	2-5%
CAS: 1310-58-3 EINECS: 215-181-3 Index number: 019-002-00-8 Reg.nr.: 01-2119487136-33-xxxx	potassium hydroxide ⚠ Met. Corr. 1, H290; Skin Corr. 1A, H314 ⚠ Acute Tox. 4, H302	0.5-2%

• SVHC

10043-35-3 | boric acid

• Additional information

 For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

• 4.1 Description of first aid measures

• General information

Personal protection for the First Aider.
Instantly remove any clothing soiled by the product.

• After inhalation

 Supply fresh air.

• After skin contact

Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

• After eye contact

Rinse opened eye for several minutes under running water (at least 15 minutes).
Remove contact lenses, if present and easy to do.
Use eye protection.
Call a doctor immediately.

(Contd. on page 4)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 3)

- **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; instantly call for medical help.
- **4.2 Most important symptoms and effects, both acute and delayed**
No known symptoms to date.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water spray jet or alcohol-resistant foam.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
- **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire
Sulphur oxides (SO_x)
Carbon monoxide
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
At formation of toxic gases:
Put on breathing apparatus.
- **Additional information** The product is not flammable

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
- **6.2 Environmental precautions:** Do not allow to enter drainage system, surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to item 13.
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.
- **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Do not handle until all safety precautions have been read and understood.

(Contd. on page 5)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 4)

- **Information about protection against explosions and fires:**
No special measures required.
The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Store only in unopened original containers.
Keep container tightly closed in a cool, well-ventilated place.
- **Information about storage in one common storage facility:**
Keep away from foodstuffs, beverages and food.
Do not store together with acids.
Store away from oxidising agents.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store in a cool place.
- **Recommended storage temperature:** 5-25 °C
- **Storage class**
LGK 12
(German Technical Rule for Hazardous Substance – TRGS 510)
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical systems:** No further data; see section 7.

- **Components with limit values that require monitoring at the workplace:**

123-31-9 hydroquinone

WEL Long-term value: 0.5 mg/m³

111-46-6 2,2'-oxybisethanol

WEL Long-term value: 101 mg/m³, 23 ppm

1310-58-3 potassium hydroxide

WEL Short-term value: 2 mg/m³

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures should be adhered to general rules for handling chemicals.
Keep away from foodstuffs, beverages and food.
Take off immediately all contaminated clothing.
Wash contaminated clothing before reuse.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not required.

(Contd. on page 6)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 5)

- **Protection of hands:**

Protective gloves.

The protective gloves to be used must comply with the specifications of the (EU) 2016/425 and the resultant standard EN 374.

This recommendation applies only to the product stated in the Safety Data Sheet and supplied by us as well as to the purpose specified by us.

Only use chemical-protective gloves with CE-labelling of category III.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

Thickness	Breakthrough time	
	(mm)	(min)
Nitril rubber	0,38	> 480
Neoprene	0,65	> 240
Butyl rubber	0,36	> 480

Avoid natural rubber gloves.

- **As protection from splashes gloves made of the following materials are suitable:**

Synthetic gloves

Value for permeation: Level \geq 3 (60 min)

- **Eye protection:** Tightly sealed safety glasses.

- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Fluid
Colour:	Light yellow
	Clear
Odour:	Not characteristic

- **pH-value at 25 °C:** 10.9

- **Change in condition**

Melting point/freezing point:	< 5 °C
Initial boiling point and boiling range:	> 100 °C

- **Flash point:** Not applicable

- **Self-inflammability:** Product is not selfigniting.

- **Explosive properties:** Product is not explosive.

- **Vapour pressure at 20 °C:** 23 hPa

- **Density at 20 °C** 1.291 g/cm³

- **Solubility in / Miscibility with Water:** miscible

(Contd. on page 7)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 6)

- **Viscosity:**
 - dynamic:** Not determined
 - kinematic:** Not determined

- **Solvent content:**
 - Organic solvents:** 5.2 %
 - Water:** ~ 60 %

- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with strong acids
Reacts with acids releasing sulphur dioxide
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- **LD/LC50 values that are relevant for classification:**

123-31-9 hydroquinone

Oral	LD50	320 mg/kg
------	------	-----------

111-46-6 2,2'-oxybisethanol

Oral	LD50	12565 mg/kg (rat)
Dermal	LD50	11890 mg/kg (rabbit)

584-08-7 potassium carbonate

Oral	LD50	> 2000 mg/kg (rat)
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10043-35-3 boric acid

Oral	LD50	2660 mg/kg (rat)
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1310-58-3 potassium hydroxide

Oral	LD50	365 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye damage.

(Contd. on page 8)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 7)

- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Additional toxicological information:**
This statement was deduced from the properties of the single components.
Dangerous for the environment.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
Suspected of causing genetic defects.
- **Carcinogenicity**
Suspected of causing cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

• 12.1 Toxicity

• Aquatic toxicity:

123-31-9 hydroquinone

EC50/48 h	0.29 mg/l (Daphnia magna)
IC50/72 h	0.335 mg/l (Selenastrum capricornutum)
LC50/96 h	0.044 mg/l (Pimephales promelas)

111-46-6 2,2'-oxybisethanol

EC50/48 h	> 10000 mg/l (Daphnia magna)
LC50/96 h	75200 mg/l (Pimephales promelas)

584-08-7 potassium carbonate

EC50/48 h	380-820 mg/l (Daphnia magna)
LC50/96 h	310-750 mg/l (Pimephales promelas)

10043-35-3 boric acid

EC50/48 h	133 mg/l (Daphnia magna)
LC50/96 h	50 - 100 mg/l (Onchrohynchus mykiss)

1310-58-3 potassium hydroxide

LC50/96 h	80 mg/l (Gambusia affinis)
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- **12.2 Persistence and degradability** Not determined
- **Behaviour in environmental systems:** Not determined
- **12.3 Bioaccumulative potential** Not determined
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:** No further relevant information available.
- **Behaviour in sewage processing plants:** Not determined

(Contd. on page 9)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A



(Contd. of page 8)

- **Additional ecological information:**
- **General notes:**
At present there are no ecotoxicological assessments.
Water hazard class 3 (German Regulation) (Self-assessment): highly water-endangering.
Do not allow product to reach ground water, water bodies or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Must be specially treated under adherence to official regulations.
- **Uncleaned packagings:**
- **Recommendation:**
Non contaminated packagings can be used for recycling.
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
Packagings that cannot be cleaned are to be disposed of in the same manner as the product.
EAK-No. 15 01 10
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- | | |
|--|---|
| <ul style="list-style-type: none"> · 14.1 UN-Number · ADR/RID, IMDG, IATA | UN 3082 |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR/RID, IMDG, IATA | ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (hydroquinone) |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR/RID, IMDG, IATA | |
| <div style="display: flex; align-items: center;">   </div> | |
| <ul style="list-style-type: none"> · Class | 9 Miscellaneous dangerous substances and articles. |
| <ul style="list-style-type: none"> · Label | 9 |

(Contd. on page 10)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 9)

<ul style="list-style-type: none"> 14.4 Packing group ADR/RID, IMDG, IATA 	III
<ul style="list-style-type: none"> 14.5 Environmental hazards: Marine pollutant: Special marking (ADR/RID): Special marking (IATA): 	Yes Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
<ul style="list-style-type: none"> 14.6 Special precautions for user EMS Number: 	Warning: Miscellaneous dangerous substances and articles. F-A,S-F
<ul style="list-style-type: none"> 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> Transport/Additional information: 	
<ul style="list-style-type: none"> ADR/RID Transport category Tunnel restriction code 	3 -
<ul style="list-style-type: none"> IATA Remarks: 	Packing Instruction PAX/CAO 964
<ul style="list-style-type: none"> UN "Model Regulation": 	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (HYDROQUINONE), 9, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS05 GHS07 GHS08 GHS09

- Signal word Danger
- Hazard-determining components of labelling:
hydroquinone
potassium hydroxide
- Hazard statements
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

(Contd. on page 11)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 10)

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

H400 Very toxic to aquatic life.

• Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves / eye protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• Directive 2012/18/EU

• **Named dangerous substances - ANNEX I** None of the ingredients is listed.

• **Seveso category E1** Hazardous to the Aquatic Environment

• **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t

• **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

• National regulations

• Information about limitation of use:

Employment restrictions concerning pregnant and lactating women must be observed.

• Decree to be applied in case of technical fault:

Class	Share in %
I	6.2
NK	5.2

• **Water hazard class:** Water danger class 3 (Self-assessment): highly water-endangering.

• Other regulations, limitations and prohibitive regulations

• Substances of very high concern (SVHC) according to REACH, Article 57

10043-35-3 boric acid

• **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• Relevant phrases

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H341 Suspected of causing genetic defects.

(Contd. on page 12)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 21.06.2022

Version 4.2

Revision: 21.06.2022

Trade name: AUTOMATIC X-RAY FILM DEVELOPER CONCENTRATE PART A

(Contd. of page 11)

H351 Suspected of causing cancer.
H360FD May damage fertility. May damage the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

• **Recommended restriction of use** No public product, only for commercial use

• **Department issuing data specification sheet:**

Laboratory

Tel.: +49 (0)39291 425-15

• **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Met. Corr. 1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

• **Sources**

applicable EEC directives:

- 1907/2006

- 1272/2008

Internal physical tests, MSDS of the ingredients,

Information system on hazardous substances of the German Social Accident Insurance

(GESTIS-database on hazardous substances), <http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp>

• *** Data compared to the previous version altered.**

GB